# The Outlook

## A Running Commentary on Air Topics

### Perhaps Not So Black . . .

THE serious student of aerodynamics will find food for thought in the article on stalling of tapered wings by Dr. Lachmann, chief designer to Handley Page, Ltd., published on pp. 10-13 of this week's issue of *Flight*. The author points out that, according to aerodynamic theory, a wing of rectangular plan form stalls first at the centre; the wing of elliptic plan form stalls simultaneously over the whole span; tapered wings stall first at the tips, the greater the taper the greater the difference in actual, as distinct from apparent, angle of incidence at the tips and in the centre.

A tapered wing is more efficient than a rectangular from the point of view of weight, hence the urge in modern design to use it. But the tendency to "drop a wing" when flying at or near the stalling angle may become so pronounced that it may outweigh other considerations. As was, perhaps, to be expected, Dr. Lachmann calls attention to the remedy. The combination of a partial flap and wing-tip slots is shown by him to be very effective, giving not only a high maximum lift coefficient due to the favourable lift coefficient distribution, but also a good margin for damping in roll.

It should be pointed out that although Dr. Lachmann's arguments are scarcely open to challenge, the behaviour of the tapered wing may not be quite so black as a study of the article might lead one to believe. The question of wing loading enters into the argument to a considerable extent, quantitatively if not qualitatively. Machines *have* been built with tapered wings which are remarkably docile at the stall, and it is possible to incorporate features in the general design of a machine which will mitigate very materially any tendency to "drop a wing." Nevertheless, it is very desirable that the characteristics of tapered wings should be known and understood, and for that reason we believe our readers will welcome Dr. Lachmann's article.

### Rotating Wings

AFTER a lull of many months there is activity once more in the camp of the helicopterists. This time it is a French constructor who has focused attention on the possibilities of direct-lift flight. M. Louis Breguet, who is one of the pioneers of aviation, having been among the very first to design and build aeroplanes, was attracted to the helicopter idea in the very early days of flying, and there is thus poetic justice in the fact that a machine built by his firm should in modern times achieve a considerable measure of success, having recently, as recorded elsewhere in this issue, flown at a horizontal speed of more than sixty miles per hour; this followed upon an earlier success in which the machine covered a close circuit of 500 metres.

It may well be argued that neither of these two figures is very impressive. Compared with the aeroplane, which has had a quarter of a century of development, that is true. But let it be remembered that, for one thing, the Breguet-Dorand Gyroplane is still in a very experimental stage. That alone is sufficient to account for the modest figures. But on top of that one has the very important fact that the art of piloting a helicopter is still one that has to be learned.

Perhaps the promising results which have been attained with the French machine may lead to a real start being made in this country with the construction of the Asboth helicopter, which was described in *Flight* of March 21, 1935, and which resembles in general principle, if not in details, the Breguet-Dorand.

### Pioneering in Persia

IT may be remembered that a few weeks ago there appeared in *Flight*, under the "Twenty-five Years Ago" heading, a note on the first aeroplane to be bought for purely commercial use—a Blériot monoplane (50 h.p. Gnome) sent out to Persia to the order of an English oil engineer.

A reader has now shed further light on the distinguished, if brief, life of this pioneer of commercial aircraft. He sends a copy of *The Naft*, the Anglo-Persion Oil Company's magazine, which has dug up the whole story from the sands of the desert, so to speak. Apparently the late Mr. Charles Ritchie, the engineer who directed the construction of the first pipe-line in Persia, became convinced, even at this early date—only eighteen months after Blériot flew the Channel—of the potentialities of the aeroplane in connection with his work. He therefore asked Mr. (now Air Commodore) J. G. Weir, of the well-known Glasgow firm of engineers, who was at that time learning to fly as Blériot's first pupil at Hendon, to send him out a machine. The only flying which he (Mr. Ritchie) had even seen was a display by Paulhan at Sandown Park, but when the new Blériot arrived he straightway set out to teach himself to fly, aided only by letters from Mr. Weir.

Taxi-ing practice having buckled several pairs of wheels on the rough ground, he determined to get into the air, made quite a creditable flight, and then touched a wing-tip on a low turn over a hillock, writing-off the machine—and, incidentally, from an upside-down position in the wreckage, soaked with petrol and oil, waving back the frightened spectators in order that a friend might secure a snapshot.

Thus the brief story of the first commercial aircraft. It would be interesting to trace the identity of the second.

### Line of Least Resistance

OBSERVERS of modern tendencies in aircraft design cannot fail to have noticed the almost universal use into which has come the low-wing monoplane. The appeal of this type, in small as well as large aircraft, is largely to be found in the relative ease with which the undercarriage drag can be reduced. The proximity of the wing to the ground reduces the length of the undercarriage, and, whether it is to be "trousered" or made retractable, this is an advantage.

Modern conditions have become such that the aircraft designer can no longer afford to think merely of his own convenience. He must of necessity think of his customers, be they private owners or passengers in larger commercial types. It can scarcely be denied that the low-wing arrangement leaves something to be desired in the matter of view, more particularly from the back seats in a smaller type and from the middle seats of the larger type.

It would be well worth while getting together the opinions of a large number of air travellers on this point. Doubtless their reactions will differ, some being content with the low-wing view, such as it is, and a book to while away the hours of a long journey without troubling much whether or not they see anything of the country over which they are flying. Others, however, may very well feel that the obstruction by the wing of precisely that area of vision which alone is worth while is an irritation with which they should not be asked to put up.

Should it be found that a large percentage of air travellers are of the latter opinion, the aircraft designer will have to meet their demands, and the high-wing monoplane may once more resume the place it seems to have lost.